

REMARKS

Claims 1-16 and 25 currently are pending.

Restriction Requirement

The examiner acknowledged the election with traverse of Group I (claims 1-16) but still deemed the requirement proper. Therefore, applicants cancel claims 18-24 which are drawn to an invention nonelected with traverse.

Sequence Disclosure

The examiner has required that the primers located on page 18 of the specification be included in a sequence disclosure. Therefore, applicants submit herein a revised sequence disclosure which includes the primers located on page 18 of the specification.

A copy of the Sequence Listing in computer readable form is attached hereto. The content of the paper copy of the Sequence Listing and the copy of the Sequence Listing in computer readable form is the same, and includes no new matter. It is believed that by submitting the present amendment and sequence listing diskette, the application now fully complies with the requirements of 37 CFR 1.821-1.825. Favorable action by the examiner is solicited.

Foreign Priority

Applicants soon will submit a certified translation of German patent (1970066.9) for proper claiming of priority under 35 USC § 119(a)-(d).

Arrangement of the Specification

As required by the examiner applicants insert proper headings in the specification.

35 USC § 112, first paragraph (Enablement)

The examiner rejected claims 1-16 because the specification while enabling for a DNA sequence encoding a hydroxyphenylpyruvate dioxygenase (HPPD) isolated from barley, an expression vector comprising said isolated DNA sequence, a method of transforming comprising said expression cassette and a plant transformed therewith, does not reasonably provide enablement for other plant DNA sequences encoding an HPPD or uses thereof.

To overcome the rejection applicants amend claim 1 so that it is directed to an isolated DNA sequence encoding a barley HPPD. This amendment is supported by the specification on page 7, line 26. Applicants also add new claim 25, which depends on claim 1.

35 USC § 112, second paragraph (Indefiniteness)

Applicants follow the examiner's suggestions and amend the claims accordingly. Claim 6 has been amended to a process claim which comprises a definite step.

35 USC §102/§ 103

The examiner rejected claim 1 under 35 USC § 102(b) as being anticipated by the intervening reference Krupinska et al. because it discloses SEQ ID NO: 1. Applicants will soon submit a copy of the a translation of the priority application which should overcome this rejection.

Claims 1-13, 5-12, 14 and 16 were rejected under 35 USC § 102(e) as being anticipated by Della Penna et al. (US 6,087,563). Claims 4, 13 and 15 were rejected as being obvious under 35 USC § 103(a) over Della Penna et al. Applicants first point out that claim 1 as amended is not disclosed by Della Penna et al. as this reference does

not disclose a barley HPPD. Furthermore, applicants herein submit a declaration signed by Dr. Jon Falk who has established new data and summarized the already present data. Kindly the consider the arguments in the declaration.

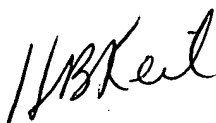
For the reasons expressed above, it is urged that the prior art references cited by the examiner either singly or in combination fail to anticipate or suggest the present invention as defined by the amended claims. Accordingly, a *prima facie* case of obviousness has not been established by the examiner, and the rejection under 35 USC § 103 should be withdrawn.

A check in the amount of \$400.00 is attached to cover the required two month extension of time fee.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

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HBK/DSK/kas

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Cancel claims 18-24.

Amend claims 1-14 and add new claim 25 as follows:

1. (amended) [The] An isolated DNA sequence encoding barley [SEQ ID NO:1 and DNA sequences hybridizing therewith, encoding an] HPPD.

2. (amended) An expression cassette comprising a promoter and [a] the DNA sequence as claimed in claim 1.

3. (amended) An expression cassette as claimed in claim 2, comprising [the] a CaMV 35S promoter.

4. (amended) An expression cassette as claimed in claim 2, comprising [the] a seed-specific phaseolin promoter.

5. (amended) An expression cassette as claimed in claim 2, further comprising the DNA sequence as claimed in claim 1 being functionally linked to another protein in such a way that a joint translation product is formed.

6. (amended) [The use of] A process for transforming plants comprising the step of incorporating into plants the expression cassette as claimed in claim 2 [for transforming plants].

7. (amended) A method of transforming a plant, which comprises introducing [an] the expression cassette as claimed in claim 2 into a plant cell, into callus tissue, into an entire plant or into plant cell protoplasts.

8. (amended) A method of transforming plants, which comprises

1) transferring the expression cassette as claimed in claim 2 into an agrobacterial

strain.

- 2) isolating the recombinant clones formed, and
- 3) [using the latter for transforming plants] transforming a plant with the isolated recombinant clones.

9. (amended) [A] The method as claimed in claim 8, the transformation being accomplished with the aid of the strain *Agrobacterium tumefaciens*.

10. (amended) [A] The method of transforming plants as claimed in claim 7, wherein the transformation is accomplished with the aid of electroporation.

11. (amended) [A] The method of transforming plants as claimed in claim 7, wherein the transformation is accomplished with the aid of the particle bombardment method.

12. (amended) A plant with an elevated vitamin E content, comprising [an] the expression cassette as claimed in claim 2.

13. (amended) [A] The plant as claimed in claim 12, selected from the group consisting of soya, barley, oat[s], wheat, oilseed rape, maize, [or] and sunflower[s].

14. (amended) A method of generating plants with an elevated vitamin E content, which comprises expressing, in plants, [a] the DNA sequence as claimed in claim 1.

25. (new) An isolated DNA sequence as claimed in claim 1, comprising the sequence SEQ ID NO: 1.

COPY OF ALL CLAIMS

1. (amended) An isolated DNA sequence encoding barley HPPD.
2. (amended) An expression cassette comprising a promoter and the DNA sequence as claimed in claim 1.
3. (amended) An expression cassette as claimed in claim 2, comprising a CaMV 35S promoter.
4. (amended) An expression cassette as claimed in claim 2, comprising a seed-specific phaseolin promoter.
5. (amended) An expression cassette as claimed in claim 2, further comprising the DNA sequence as claimed in claim 1 being functionally linked to another protein in such a way that a joint translation product is formed.
6. (amended) A process for transforming plants comprising the step of incorporating into plants the expression cassette as claimed in claim 2.
7. (amended) A method of transforming a plant, which comprises introducing the expression cassette as claimed in claim 2 into a plant cell, into callus tissue, into an entire plant or into plant cell protoplasts.
8. (amended) A method of transforming plants, which comprises
 - 1) transferring the expression cassette as claimed in claim 2 into an agrobacterial strain,
 - 2) isolating the recombinant clones formed, and
 - 3) transforming a plant with the isolated recombinant clones.
9. (amended) The method as claimed in claim 8, the transformation being accomplished with the aid of the strain *Agrobacterium tumefaciens*.

10. (amended) The method of transforming plants as claimed in claim 7, wherein the transformation is accomplished with the aid of electroporation.

11. (amended) The method of transforming plants as claimed in claim 7, wherein the transformation is accomplished with the aid of the particle bombardment method.

12. (amended) A plant with an elevated vitamin E content, comprising the expression cassette as claimed in claim 2.

13. (amended) The plant as claimed in claim 12, selected from the group consisting of soya, barley, oat, wheat, oilseed rape, maize, and sunflower.

14. (amended) A method of generating plants with an elevated vitamin E content, which comprises expressing, in plants, the DNA sequence as claimed in claim 1.

15. A method as claimed in claim 14, wherein the DNA sequence is expressed in a tobacco plant.

16. A method as claimed in claim 14, wherein expression takes place in the leaves or the seeds of the plant.

25. (new) An isolated DNA sequence as claimed in claim 1, comprising the sequence SEQ ID NO: 1.

SEQUENCE LISTING

<110> Seulberger, Harald
 Lerchl, Jenms
 Schmidt, Ralf-Michael
 Krupinska, Karin
 Falk, Jon

<120> DNA sequence encoding a hydroxyphenylpyruvate dioxygenase, and its overproduction in plants

<130> 0050/48141

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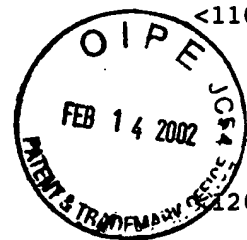
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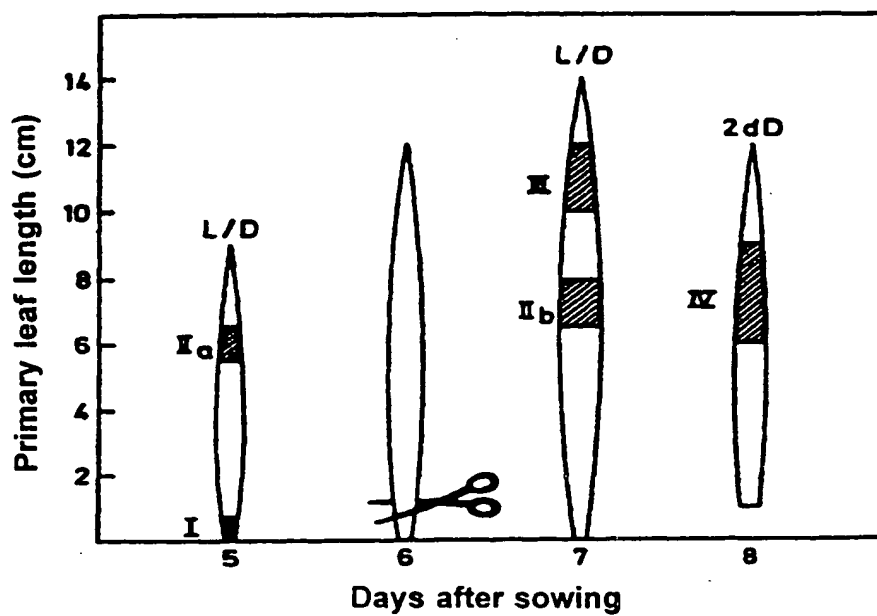
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(1/7)

FIG. 1

[Fig. 1/7]



[2/7]



FIG. 2

[Fig. 2/7]

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3100 nt →

1600 nt →



[3/7]

FIG. 3

[Fig. 3/7]

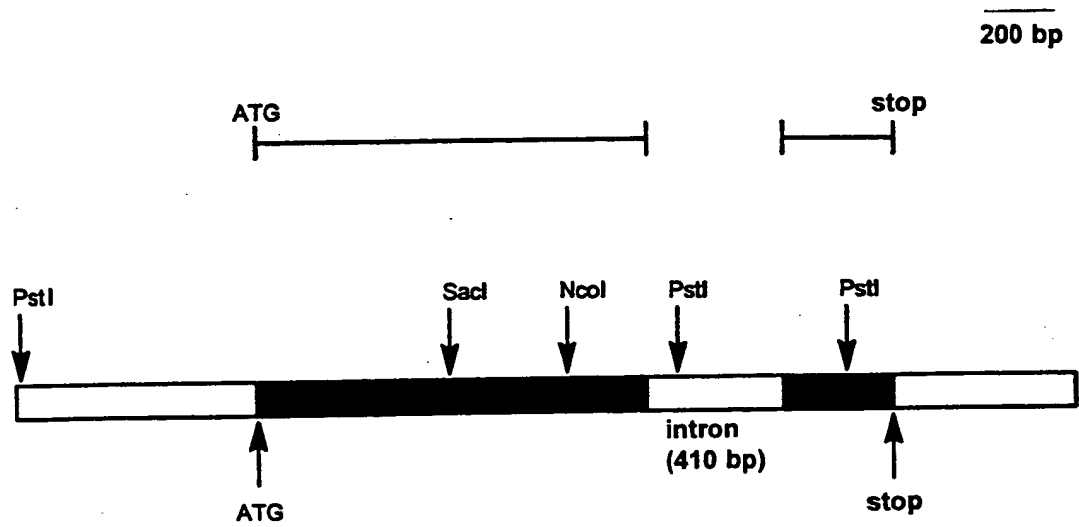


FIG. 4

[Fig. 4/7]

FIG.4A

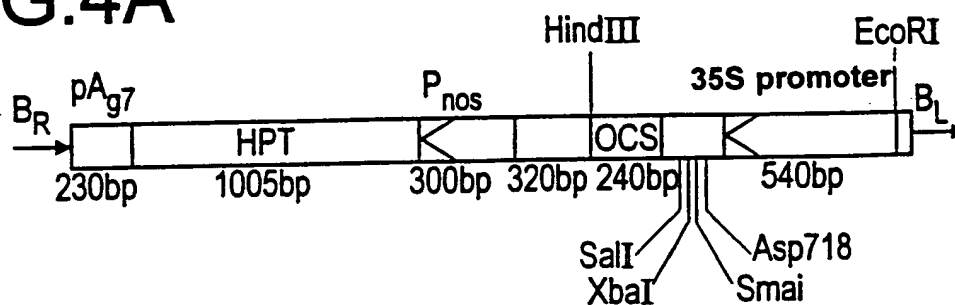
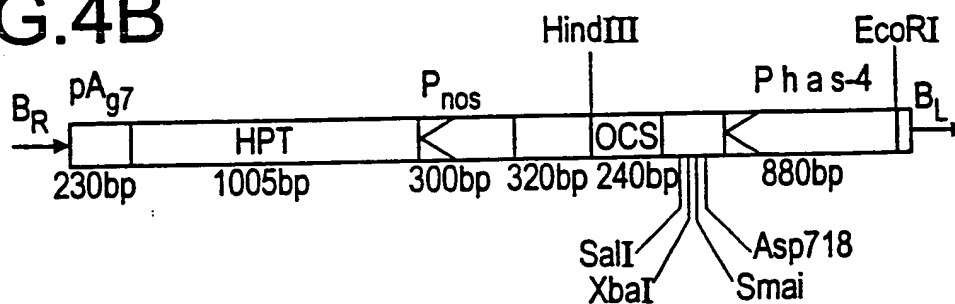


FIG.4B



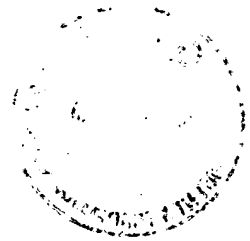


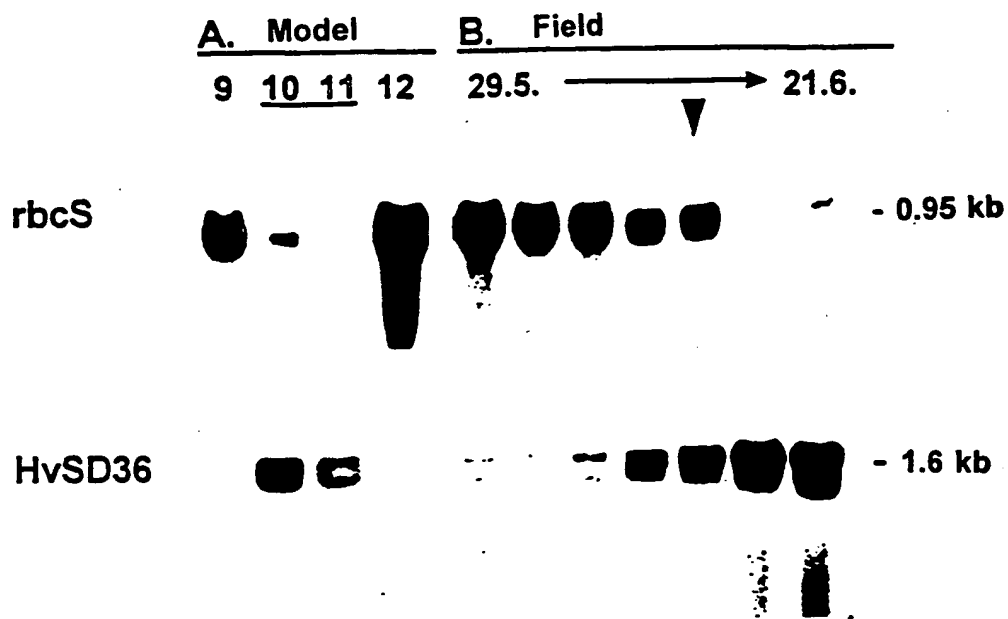
FIG. 5

[Fig. 5/7]



FIG. 6

Fig. 6/7



7/7



Fig. 7/7

FIG. 7

B E H X

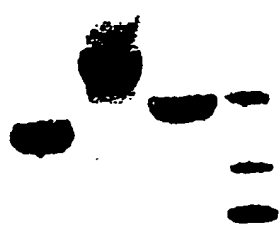


FIG. 8

